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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NORRIS, TREMAYNE M

ART UNIT	PAPER NUMBER
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2137

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/597,973

Applicant(s)

PURTELL ET AL.

Examiner

Tremayne M. Norris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,9-22,24-27 and 29-35 is/are rejected.
- 7) ☒ Claim(s) 4,7,8,23 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 4 line 13, the elements described in the paragraph are not found in Fig.1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,17-19,30 rejected under 35 U.S.C. 102(e) as being anticipated by Coile et al (US pat 6,006,268).

Regarding claim 1, Coile et al teach a method for enhancing network throughput between an internal network and an external network to which one or more servers are connected, comprising the steps of:

providing a firewall between the internal network and the external network (col.7 lines 24-28);

opening a plurality of TCP connections between said firewall and one or more of the servers, each said TCP connection having a TCP control block; creating a common TCP control block for a group of TCP connections through said firewall to the same server; placing connection state data shared by each said TCP connection into said common TCP control block, wherein each individual said TCP control block includes a pointer to the CCB for said shared connection state data. (col.16 line 39 thru col.17 line 16).

Regarding claim 17, Coile et al teach the method of claim 1, wherein said firewall is a proxy server (col.7 lines 24-28).

Regarding claim 18, Coile et al teach the step of adjusting the connection rate and data throughput of one said TCP connection through said firewall based on the connection rate and data throughput of said other TCP connections. as determined from said common TCP control blocks (col.6 lines 8-20).

Regarding claim 19, Coile et al teach the method of claim 1, wherein said common TCP control block created for said firewall is stored in said firewall (col.6 lines 13-20; col.16 lines 39-43).

Claim 30 is a system claim that is substantially equivalent to method claim 1, therefore claim 30 is rejected because of similar rationale.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2,3,5,6,10-16,31,32 rejected under 35 U.S.C. 103(a) as being unpatentable over Coile et al, and further in view of Coss (EP0909073).

Regarding claim 2, Coile et al teach the method of claim 1, but do not teach the steps of connecting said firewall to one or more additional firewalls with an internal network, and sharing TCP control block with one or more of said additional firewalls connected to said firewall. Coss teaches the steps of connecting said firewall to one or more additional firewalls with an internal network, and sharing TCP control block with one or more of said additional firewalls connected to said firewall (pages 7-8 section 5). It would have been obvious to one of ordinary skill in the art to combine Coile et al's apparatus for reducing overhead on a proxied connection with Coss's teachings of sharing control blocks with one or more firewalls in order to unburden the firewall with application proxies (Coss page 3 lines 4-7).

Regarding claim 3, Coile et al and Coss teach the method of claim 3, in addition Coss teaches sharing step is performed by pushing said TCP control block from one of said firewalls to one or more of said additional firewalls (pages 7-8 section 5).

Regarding claim 5, Coile et al and Coss teach the method of claim 3, in addition Coss teaches one of said firewalls initiates said pushing after opening a new TCP connection (page 7 lines 36-43).

Regarding claim 6, Coile et al and Coss teach the method of claim 2, in addition Coss teaches said sharing step is performed by pulling said common TCP control block to one firewall from one or more of said other firewalls (page 8 lines 18-28).

Regarding claim 10, Coile et al and Coss teach the method of claim 2, in addition Coile et al teach the step of adjusting the connection rate and data throughput through one said firewall based on the connection rate and data throughput through said one or more other firewalls, as determined from said one or more common TCP control blocks received from said one or more other firewalls (col.6 lines 8-20).

Regarding claim 11, Coile et al and Coss teach the method of claim 2, in addition Coile et al teach the step of providing a single physical point of contact between the internal network and the external network (fig.1; col.7 lines 24-25).

Regarding claim 12, Coile et al and Coss teach the method of claim 2, in addition Coile et al teach the step of adjusting the connection rate and data throughput of one or more said TCP connection through one said firewall based on the connection rate and data throughput of one or more said other firewalls, as determined from said common TCP control blocks (col.6 lines 8-20).

Regarding claim 13, Coile et al and Coss teach the method of claim 2, in addition Coss teaches the step of deleting one of said TCP control blocks associated with an individual firewall a substantially fixed period of time after said TCP control block was created (page 4 lines 36-37).

Regarding claim 14, Coile et al and Coss teach the method of claim 2, in addition Coss teaches the step of deleting one of said common TCP control blocks associated with an individual firewall a substantially fixed period of time after said common TCP control block was received from another said firewall (page 4 lines 36-37).

Regarding claim 15, Coile et al teach the method of claim 1, but do not teach the step of deleting one of said common TCP control blocks from one of said firewalls if said common TCP control block has not been used by said one of said firewalls for a substantially fixed period of time. Coss, however, teaches the step of deleting one of said common TCP control blocks from one of said firewalls if said common TCP control

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block has not been used by said one of said firewalls for a substantially fixed period of time (page 4 line 29). It would have been obvious to one of ordinary skill in the art to combine Coile et al's apparatus for reducing overhead on a proxied connection with Coss's teaching of deleting TCP control blocks in order to be able to free-up memory space (Coile et al col.9 lines 1-15).

Claim 31 is a system claim that is substantially equivalent to method claim 2, therefore claim 31 is rejected because of similar rationale.

Claim 32 is a system claim that is substantially equivalent to method claim 11, therefore claim 32, is rejected because of similar rationale.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coile et al and Coss, and further in view of Foss et al (US pat 6,295,557).

Regarding claim 9, Coile et al and Coss teach the method of claim 2, but do not teach storing control blocks received from one or more firewalls. Foss et al do teach storing control blocks (col. 7 lines 1-12; col.7 lines 32-35). It would have been obvious to one of ordinary skill in the art to combine Coile et al and Coss's apparatus for reducing overhead on a proxied connection with Foss et al's teaching of storing control

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blocks in order to mark the control block as being a control block that belongs to a connection from a particular source (Foss et al col.7 lines 15-18).

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coile et al and Coss, and further in view of Schilke.

Regarding claim 16, Coile et al and Coss teach the method of claim 15, but do not teach said period of time is substantially equivalent to the TCP maximum segment lifetime. Schilke teaches using the period of time substantially equivalent to the TCP maximum segment lifetime (page 2 section 3). It would have been obvious to one of ordinary skill in the art to combine Coile et al and Coss's apparatus for reducing overhead on a proxied connection with Schilke's teaching of using the TCP maximum segment lifetime in order to eliminate reuse of sequence numbers (Schilke page 2 section 3).

8. Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Coile et al, and further in view of Coss, Foss et al, and Schilke.

Claim 20 is rejected as being substantially equivalent to a combination of claims 1,2,9,15,16, and 18, therefore claim 20 is rejected because of similar rationale:

connecting two or more firewalls to the internal network, wherein said firewalls are proxy servers (claim 2);

connecting the internal network and the external network through said one or more firewalls (claim 1);

opening a plurality of TCP connections between said firewall and one or more of the servers, each said TCP connection having a TCP control block (claim 1);

creating a common TCP control block for a group of TCP connections through said firewall to the same server (claim 1);

placing connection state data shared by each said TCP connection into said common TCP control block, wherein each individual said TCP control block includes a pointer to the CCB for said shared connection state data (claim 1);

sharing said common TCP control blocks among said firewalls (claim 2);

storing said common TCP control blocks received from said one or more other firewalls in said receiving firewall (claim 9);

adjusting the connection rate and data throughput of each said firewall based on the connection rate and data throughput of said one or more other firewalls, as determined from said one or more common TCP control blocks received from said one or more other firewalls (claim 18); and

deleting one of said common TCP control blocks from one of said firewalls if said common TCP control block has not been used by said one of said firewalls for a period of time substantially equivalent to the TCP maximum segment lifetime (claims 15 and 16).

9. Claims 21,22,24-27,29,33-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Coile et al, and further in view of Coss and Foss et al.

Regarding claim 21, Coile et al teach a method for enhancing network throughput between an internal network and an external network to which a server is connected, comprising the steps of: sending a TCP connection request to the server from one of said firewalls (col.6 lines 42-46); and updating said common TCP control block based on the response from the server to said TCP connection request (col.16 line 60 thru col.17 line 16). Coile et al do not teach connecting two or more firewalls to the internal network, and also do not teach determining whether a common TCP control block exists for a TCP connection between one of said firewalls and the server, and creating one if one does not exist. Coss teaches connecting two or more firewalls to the internal network (Coss page 3 lines 4-7). Foss et al teach determining whether a common TCP control block exists for a TCP connection between one of said firewalls and the server (col.7 lines 28-46), and creating one if one does not exist (col.7 lines 1-12). It would have been obvious to one of ordinary skill in the art to combine Coile et al's apparatus for reducing overhead on a proxied connection with Coss's teachings of connecting two or more firewalls to an internal network in order to unburden the firewall with application proxies (Coss page 3 lines 4-7). It would have been obvious to one of ordinary skill in

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the art to combine Coile et al's apparatus for reducing overhead on a proxied connection with Foss et al's teaching of determining whether a common TCP control block exists for a TCP connection between one of said firewalls and the server in order to mark the control block as being a control block that belongs to a connection from a particular source (Foss et al col.7 lines 15-18).

Regarding claim 22, Coile et al, Coss, and Foss et al teach the method of claim 21, in addition Coile et al teach the steps of establishing a connection between said firewall and said server, and updating said common TCP control block with connection state data during said connection (col.16 line 60 thru col.17 line 16).

Regarding claim 24, Coile et al, Coss, and Foss et al teach the method of claim 21, in addition Coss teaches the step of sharing said TCP control block with one or more of said other firewalls (page 7 lines 36-37).

Claim 25 is substantially equivalent to claim 21, therefore claim 25 is rejected because of similar rationale.

Claims 26 and 27 are substantially equivalent to claim 22, therefore claims 26 and 27 are rejected because of similar rationale.

Claim 29 is substantially equivalent to claim 24, therefore claim 29 is rejected because of similar rationale.

Claim 33 is substantially equivalent to a combination of claims 1,13 and 21, therefore claim 33 is rejected because of similar rationale:

sending a request between a firewall and one or more of the servers utilizing a TCP connection, said firewall residing between the internal network and the external network (claim 21);

storing state information associated with said TCP connection based on said request (claim 1);

deleting said state information after a predetermined amount of time (claim 13);

receiving a response to said request from the server (claim 21);

processing said response based on said state information (claim 21); and

updating said state information associated with said TCP connection based on said response (claim 21).

Claims 34 and 35 are substantially equivalent to claim 33, therefore claim 33 is rejected because of similar rationale.

Allowable Subject Matter

Claims 4,7,8,23,28 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 4, the cited prior art fails to specifically teach the method of claim 3, wherein said pushing takes place at periodic intervals.

With respect to claim 7, the cited prior art fails to specifically teach the method of claim 6, wherein said pulling takes place at periodic intervals.

With respect to claim 8, the cited prior art fails to specifically teach the method of claim 6, wherein one of said firewalls initiates said pulling before said firewall attempts to open a new TCP connection.

With respect to claim 23, the cited prior art fails to specifically teach the method of claim 22, further comprising the steps of shutting down said connection, and updating said common TCP control block based on the type of shutdown performed.

With respect to claim 28, the cited prior art fails to specifically teach the method of claim 27, further comprising the steps of shutting down said connection, and updating said common TCP control block based on the type of shutdown performed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tremayne M. Norris whose telephone number is (703)

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305-8045. The examiner can normally be reached on M-F 7:30AM-5:00PM alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (703) 305-4789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tremayne Norris

March 24, 2004


MATTHEW SMITHERS
PRIMARY EXAMINER
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